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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/826,432

04/16/2004

David Allen Kastrop

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EXAMINER

NGUYEN, ANDREW H

ART UNIT

PAPER NUMBER

3746

NOTIFICATION DATE

DELIVERY MODE

09/15/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/826,432	<b>Applicant(s)</b> KASTRUP ET AL.	
	<b>Examiner</b> ANDREW NGUYEN	<b>Art Unit</b> 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This office action is in response to the request for continued examination filed 08/25/08.

#### ***Specification***

1. The disclosure is objected to because of the following: Paragraph 21 teaches the gap 120 being a dead air cavity. However, paragraph 22 teaches a purge flow through the gap 120. How is it possible to have gap 120 serving as a dead air cavity but also having a purge flow through the cavity? A dead air cavity is known in the art as a cavity wherein the air is stagnant. Examiner suggests changing the descriptions of the cavity throughout the specification from a “dead air cavity” to an “insulating cavity”. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 7-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Amended claims 7 and 14 contain the limitations, “to facilitate preventing a flow of fuel ... at said upstream and downstream portions”. This was not found in the original specification. The closest mention was “preventing ingestion of fuel, water and/or air between venturi 36 and swirlers ...” (paragraphs 20 and 28). However, “preventing

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ingestion" does not necessarily mean "preventing a flow of fuel" because preventing ingestion does not include the case where an outlet of flow is prevented, whereas "preventing a flow of fuel" includes both preventing ingestion and preventing an outlet. Examiner suggests rewording "to facilitate preventing ..." to "to prevent ingestion of fuel, water, and air" to overcome the 112(2) rejection. Paragraphs 21 and 22 teach a dead air cavity and a purge flow through gap 120. This does not teach preventing a flow of fuel between the swirler and venturi at the upstream and downstream portions.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 7 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6,418,726 to Foust et al (Foust).

In reference to claims 7 and 14:

Foust teaches:

*A combustor for a gas turbine engine, said combustor comprising:*

*a venturi (78) comprising an upstream portion, a downstream portion and a middle portion extending therebetween (Fig 3); and*

*a secondary swirler extending circumferentially around said venturi (100), said secondary swirler coupled to said venturi (swirler 100 coupled to venturi 78 downstream near flange 46) to facilitate preventing a flow of fuel between a radially inner surface of*

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*said secondary swirler and a radially outer surface of said venturi at said upstream and downstream portions* (“to facilitate preventing flow” is ambiguous; what structure is required to “facilitate” preventing flow? An entrance with a small gap may still “facilitate” preventing flow; Examiner suggests clarifying the structure by adding “the radially inner surface of said secondary swirler contacts the radially outer surface of said venturi at said upstream and downstream portions; Foust’s swirler wall 96 is coupled to venturi wall 46 such that flow is prevented between the swirler and venturi wall), *a gap is defined between said radially inner surface of said secondary swirler and said radially outer surface of said venturi middle portion* (gap between walls 106 and 78)

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 7-8, 11, 13-15, and 17-20 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,871,501 to Bibler et al. (Bibler). The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

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In reference to claim 7:

Bibler teaches:

*A combustor for a gas turbine engine, said combustor comprising:*  
*a venturi (107) comprising an upstream portion, a downstream portion and a middle portion extending therebetween (between numerals 102 and 104 = middle portion); and*  
*a secondary swirler extending circumferentially around said venturi (140, 100), said secondary swirler coupled to said venturi (swirler 140, 100 coupled to venturi 107 downstream near flange 106) to facilitate preventing a flow of fuel between a radially inner surface of said secondary swirler and a radially outer surface of said venturi at said upstream and downstream portions (swirler wall 100 is coupled to venturi walls 106 and 103 at upstream and downstream positions; flow of fuel at these locations is prevented), a gap is defined between said radially inner surface of said secondary swirler and said radially outer surface of said venturi middle portion (gap between numerals 100 and 104)*

In reference to claims 8 and 20:

Bibler further teaches:

*further comprising a primary swirler (64) coupled to said venturi such that said venturi is between said primary and secondary swirlers (venturi wall 78).*

In reference to claim 11:

Bibler further teaches:

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*wherein said secondary swirler (140) comprises a secondary air passage (44) extending therethrough and a plurality of openings (98), said openings couple said secondary air passage and said gap in flow communication*

In reference to claims 13 and 15:

Bibler further teaches:

*wherein said gap facilitates reducing an operating temperature of said venturi (gap insulates venturi from convective heat transfer of airflow through secondary swirler)*

In reference to claim 14:

Bibler teaches:

*A gas turbine engine comprising a combustor (abstract) comprising an annular air swirler (140, 100) and an annular venturi (107), said annular venturi comprising an upstream portion, a downstream portion and a middle portion extending therebetween (between numerals 102 and 104 = middle portion), said annular air swirler coupled to said venturi (swirler 140, 100 coupled to venturi 107 downstream near flange 106) to facilitate preventing a flow of fuel between a radially inner surface of said secondary swirler and a radially outer surface of said venturi at said upstream and downstream portions (swirler wall 100 is coupled to venturi walls 106 and 103 at upstream and downstream positions; flow of fuel at these locations is prevented), a gap is defined between said radially inner surface of said air swirler and said radially outer surface of said venturi middle portion (gap between numerals 100 and 104).*

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In reference to claim 17:

Bibler further teaches:

*wherein said air swirler (140) defines a flow passageway extending therethrough (44),  
said air swirler comprises a plurality of openings (98) extending in flow communication  
between said flow passageway and said gap*

In reference to claim 18:

Bibler further teaches:

*wherein said gap facilitates maintaining an operating temperature of said venturi below  
a predetermined temperature (gap insulates venturi from convective heat transfer of  
airflow through secondary swirler; venturi will inherently fall below a certain  
temperature).*

In reference to claim 19:

Bibler further teaches:

*wherein said gap facilitates reducing coking of said venture (gap insulates venturi from  
convective heat transfer of airflow through secondary swirler; reduced venturi  
temperature will inherently reduce coking).*

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



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9. Claim 9-10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,418,726 to Foust et al (Foust) in view of US Patent 4,584,834 to Koshoffer et al. (Koshoffer).

In reference to claims 9 and 16:

Koshoffer teaches:

*wherein at least a portion of said venturi is slidably coupled to a portion of one of said primary and said secondary swirlers.*

Koshoffer teaches a gas turbine engine combustor comprising primary and secondary swirlers that are slidably coupled (col 4 lines 52-60) in order to accommodate differential thermal expansions and contractions. It would have been obvious to one of ordinary skill in the art at the time of the invention to slidably couple the components of Angell in order to accommodate differential thermal expansions and contractions, as explicitly taught by Koshoffer.

In reference to claim 10:

Koshoffer teaches:

*wherein at least a portion of said venturi is coupled to a portion of one of said primary and said secondary swirlers in a slide fit, said slide fit facilitates accommodating thermal growth of at least one of said primary and said secondary swirler with respect to said venturi.*

Koshoffer teaches a gas turbine engine combustor comprising primary and secondary swirlers that are slidably coupled (col 4 lines 52-60) in order to accommodate differential thermal expansions and contractions. It would have been obvious to one of ordinary skill in the

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art at the time of the invention to slidably couple the components of Foust in order to accommodate differential thermal expansions and contractions, as explicitly taught by Koshooffer.

10. Claim 12 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,418,726 to Foust et al (Foust) in view of US Patent 5,220,786 to Campbell (Campbell).

In reference to claim 12:

Campbell teaches:

*wherein said venturi radially outer surface comprises a layer of thermal barrier coating.*

Campbell teaches a thermally protected venturi for a combustor dome. Campbell teaches applying thermal barrier coating to a radially outer surface of the venturi (28) in order to thermally protect or insulate the venturi from hot air flowing along the outer surface (col 3 lines 8-12). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply thermal barrier coating to the outer surface of the venturi of Foust in order to thermally protect it from hot air, as explicitly taught by Campbell.

### ***Response to Arguments***

11. Applicant's arguments with respect to 7-20 have been considered but are moot in view of the new ground(s) of rejection.

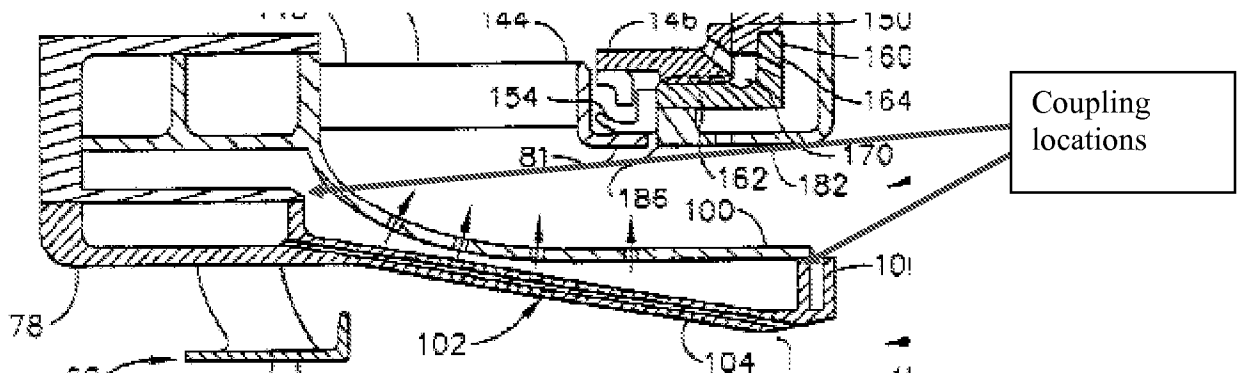
12. Applicant's arguments filed 7/21/08 have been fully considered but they are not persuasive.

Regarding reference Bibler:

With regard to Applicant's assertion that Bibler fails to teach "a swirler coupled to the venturi to facilitate preventing a flow of fuel ... at upstream and downstream portions", Examiner

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asserts that the swirler and venturi are coupled such that there is no passage for fuel to flow at the upstream and downstream portions. See the drawing below.



Regarding 103 rejections:

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW NGUYEN whose telephone number is (571)270-5063. The examiner can normally be reached on 8 am - 5 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William H. Rodríguez/  
Primary Examiner, Art Unit 3746

/AN/